

AMENDMENTS TO THE CLAIMS

The following listing of the claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An astaxanthin medium-chain fatty acid ester, wherein the medium-chain fatty acid ester is a monoester, and wherein the medium-chain fatty acid has 8 to 12 carbon atoms ~~produced by using a lipase.~~

Claims 2 – 3. (Canceled)

4. (Currently Amended) The astaxanthin medium-chain fatty acid ester according to ~~claim 3~~ claim 1, wherein the medium-chain fatty acid has an even number of carbon atoms.

5. (Previously Presented) The astaxanthin medium-chain fatty acid ester according to claim 4, wherein the medium-chain fatty acid has 8 carbon atoms.

Claim 6. (Canceled)

7. (Currently Amended) An astaxanthin octanoic acid monoester, ~~astaxanthin octanoic acid diester.~~

8. (Withdrawn) A method of producing the astaxanthin medium-chain fatty acid ester according to claim 1, by using a lipase.

9. (Withdrawn) The method according to claim 8, wherein an esterification and/or transesterification is carried out using one or more astaxanthin materials selected from the group consisting of a free astaxanthin, an ester form astaxanthin different from a medium-chain fatty acid ester, and a mixture of ester form astaxanthins different from a medium-chain fatty acid ester; and one or more medium-chain fatty acid materials selected from the group consisting of a free medium-chain fatty acid, a medium-chain fatty acid monoglyceride, a

medium-chain fatty acid diglyceride, a medium-chain fatty acid triglyceride, and a medium-chain fatty acid lower alcohol ester.

10. (Withdrawn) The method according to claim 8, wherein the lipase is one or more of lipases selected from the group consisting of a lipase derived from yeast belonging to *Candida*, lipase derived from a microorganism belonging to *Chromobacterium*, a lipase derived from a microorganism belonging to *Alcaligenes*, and a lipase derived from animal pancreas.

11. (Withdrawn) The method according to claim 10, wherein the lipase is derived from yeast belonging to *Candida*.

12. (Withdrawn) The method according to claim 9, wherein the astaxanthin material is free astaxanthin and/or a mixture of different types of ester form astaxanthins, and the medium-chain fatty acid material is a medium-chain fatty acid triglyceride.

13. (Withdrawn) The method according to claim 8, wherein water is added.

14. (Withdrawn) The method according to claim 13, wherein water is added at the amount of 0.5 w/w to 20 w/w % with respect to the amount of the oil material.

15. (Previously Presented) A food composition obtained by mixing the food and the composition comprising the astaxanthin medium-chain fatty acid ester according to claim 21 for specific nutritive requirements, or food thereof.

16. (Previously Presented) A food additive, which comprises the composition comprising the astaxanthin medium-chain fatty acid ester according to claim 21.

17. (Previously Presented) A cosmetic, which comprises the composition comprising the astaxanthin medium-chain fatty acid ester according to claim 21.

18. (Previously Presented) An animal feed, which comprises the composition comprising the astaxanthin medium-chain fatty acid ester according to claim 21.

19. (Withdrawn) A method of producing an astaxanthin octanoic acid monoester, an astaxanthin octanoic acid diester, or a composition comprising at least one astaxanthin octanoic acid monoester or astaxanthin octanoic acid diester, said method comprising the following steps (a) and (b):

(a) a step of extracting said compound from Crustacea using a solvent or supercritical CO₂, and

(b) a step of purifying said compound from the extract obtained by the step (a).

20. (Withdrawn) The method according to claim 19, wherein Crustacea is Euphausiacea.

21. (Currently Amended) A composition comprising an astaxanthin medium-chain fatty acid ester, wherein the medium-chain fatty acid ester is a monoester, and wherein the medium-chain fatty acid has 8 to 12 carbon atoms~~produced by using a lipase.~~

Claims 22 – 23. (Canceled)

24. (Previously Presented) The composition according to claim 21, wherein the medium-chain fatty acid has an even number of carbon atoms.

25. (Previously Presented) The composition according to claim 21, wherein the medium-chain fatty acid has 8 carbon atoms.

26. (Previously Presented) The composition according to claim 21, which comprises the astaxanthin medium-chain fatty acid ester in an amount of at least 0.1%.

27. (Currently Amended) A composition comprising at least one astaxanthin octanoic acid monoester ~~or astaxanthin octanoic acid diester.~~

28. (Withdrawn) A method of producing the composition comprising an astaxanthin medium-chain fatty acid ester according to claim 21, by using a lipase.

29. (Previously Presented) A food composition obtained by mixing the food and the composition according to claim 27 for specific nutritive requirements, or food thereof.
30. (Previously Presented) A food additive, which comprises the composition according to claim 27.
31. (Previously Presented) A cosmetic, which comprises the composition according to claim 27.
32. (Previously Presented) An animal feed, which comprises the composition according to claim 27.